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(54) Title: BACILLUS CIRCULANS XYLANASE MUTANTS

(57) Abstract: The invention relates to novel xylanase activity (XA) proteins and nucleic acids. The invention further relates to the use of the (XA) proteins in the process of pulp bleaching.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 00/13172

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 C12N15/56 C12N9/24 C12N1/21 D21C9/10

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 IPC 7 C12N D21C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WAKARCHUK W W ET AL: "THERMOSTABILIZATION OF THE BACILLUS CIRCULANS XYLANASE BY THE INTRODUCTION OF DISULFIDE BONDS" PROTEIN ENGINEERING, GB, OXFORD UNIVERSITY PRESS, SURREY, vol. 7, no. 11, 1994, pages 1379-1386, XP002072553 ISSN: 0269-2139 cited in the application the whole document	1,2,6,7, 12,16-21
X	EP 0 828 002 A (CANADA NAT RES COUNCIL) 11 March 1998 (1998-03-11) cited in the application abstract examples 1-15	1,2
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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- \*E\* earlier document but published on or after the international filing date
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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

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International Application No PCT/US 00/13172
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**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 94 24270 A (CAMPBELL ROBERT L ;ISHIKAWA KAZUHIKO (CA); SUNG WING L (CA); ROSE) 27 October 1994 (1994-10-27) cited in the application abstract page 164 ---	1,2
A	WO 98 47089 A (CALIFORNIA INST OF TECHN) 22 October 1998 (1998-10-22) cited in the application the whole document ---	
A	TORRONEN A ET AL: "Structural and functional properties of low molecular weight endo-1,4-beta-xylanases" JOURNAL OF BIOTECHNOLOGY, NL, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, vol. 57, no. 1-3, 16 September 1997 (1997-09-16), pages 137-149, XP004097716 ISSN: 0168-1656 -----	

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/US 00/13172

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